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in the Field

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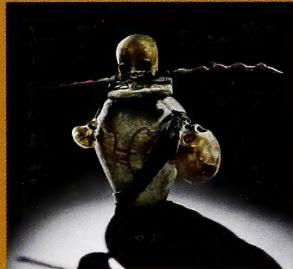
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ON THE COVER

Haitian practitioners of Vodou created this urn to hold the spirit of an ancestor. See this and other intriguing objects in *Vodou: Sacred Powers of Haiti*. Learn more on page 4.

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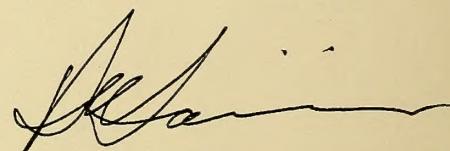
Field Museum scientists are constantly guided by inquiries.

Where have we been? Where are we going?

Fueled by curiosity about the past, present, and future of our planet, we have the obligation and privilege of sharing those discoveries with the world.

As you will see in this issue, our efforts to travel across cultures and centuries are quite diverse. That diversity is a large part of what makes The Field Museum such a special place for all of us—visitors, staff, and members. You and I, as members of the Field family, should all take advantage of the dazzling opportunities provided by the Museum to continue our education and our exploration of other cultures and times, right here in Chicago. Whether our exhibitions are bringing to life a culture from the Caribbean, as in *Vodou: Sacred Powers of Haiti*, or our scientists are investigating eras past—from unearthing fossils of new species to using CT scanning to “unwrap” mummies—we learn more about ourselves and our world every day. And, the beauty is that there is always more to discover!

With your help, The Field Museum connects us all across time and space. Thank you for being a part of this remarkable journey—and for making it all possible.



RICHARD W. LARIVIERE, PHD

PRESIDENT AND CEO



GN91739_055D / KAREN BEAN



PHOTOS COURTESY ROBERT LÜCKING

Lichens: The Exhibition

By Jillian Mayotte, Exhibitions Projects Coordinator

AMAZING IN THEIR DIVERSITY, LICHENS INHABIT A VARIETY OF ECOSYSTEMS

ACROSS THE GLOBE. These fascinating—and often beautiful—composite organisms consist of a fungus and an alga or a cyanobacterium (a bacterium that obtains its energy through photosynthesis). A new exhibition, *Lichens*, tells the story of these adaptable life forms and The Field Museum scientists who study them.



A recent adventure took place last February when the Museum's research team, including Robert Lücking, PhD, Ekaphan Kraichak, PhD, Thorsten Lumbsch, PhD, and resident graduate student Matt Nelsen, participated in a Rapid Assessment of lichen species in Puerto Rico. More than 20 lichenologists from other institutions joined forces with Field scientists to document lichen diversity within the island's rain forests, contributing to an ongoing evaluation of the region's conservation status.

While in the field, the team stumbled upon a broken-down truck completely covered in lichens. At first they joked how fun it might be to bring it back to the Museum for display. An entire truck—blanketed in lichens—would be quite a showpiece.

Soon, the suggestion transformed into a serious possibility as team members asked “why not?”



“That’s the beauty of being a scientist,” explained Thorsten Lumbsch, Robert A. Pritzker Director of the Integrative Research Center and Curator of Lichenized Fungi. “You often find yourself in unusual situations.”

Amazingly diverse, lichens thrive around the world. Left, from top to bottom: Menegazzia similis from Hawaii; Marclaria purpurina from Colombia; and Coccocarpia erythroxylif from Puerto Rico (growing on an old car tire!).

For logistical reasons, the team opted to bring back only the driver’s side door. After locating the truck’s owner (who thought the request was strange, but was happy to oblige), the team set about removing the door from its hinges and shipping it to the Museum.

In the exhibition, the lichen-covered door will accompany a selection of gorgeous field photographs, beautiful botanical illustrations, and fantastical lichen specimens. The show also will explore the benefits of lichens to humans, including their use in foods, dyes, perfumes—and even poisons—and their importance as bioindicators of pollution and climate change.

Discover what lichens are, where they grow, and how they work when *Lichens*, the exhibition, opens December 17. [ITF](#)

This exhibition is organized by The Field Museum.

This project is made possible by a grant from the U.S. Institute of Museum and Library Services with additional support from Bruce and Mary Feay.



VODOU SACRED POWERS

By Nancy O'Shea, Writer

**LOOKING BEYOND THE MISCONCEPTIONS,
VODOU: SACRED POWERS OF HAITI EXPLORES THE HIDDEN HISTORY AND
TRUE NATURE OF A LIVING RELIGION. OPENING AT THE MUSEUM ON OCTOBER 24,
THIS REMARKABLE EXHIBITION PRESENTS MORE THAN 300 AUTHENTIC VODOU
OBJECTS FROM THE CARIBBEAN ISLAND NATION.**



© MUSÉE D'ETHNOGRAPHIE DE GENÈVE, JOHNATHAN WATTS

Figures associated with Bizango secret societies often include mirrors, which are thought to connect the human and spirit worlds.

Referred to in popular culture as "voodoo," the religion's practitioners and scholars—and even the United States' Library of Congress—use the authentic spelling, *Vodou*, (pronounced *voh-DOO*). So, do not expect manufactured Hollywood images in the exhibition—there are no "voodoo dolls" with pins. Instead, the show invites visitors to discover how *Vodou* is a vital spiritual and social force that plays an important role in daily Haitian life and within Haitian immigrant groups across the world. Through text and videos, the exhibition relates different aspects of *Vodou*—including spiritual beliefs, symbols, and rituals—as told by the people who actually observe the religion.

In addition to being a religion, *Vodou* is a profound expression of the Haitian national experience. Its rituals reflect a remembrance of the country's triumph over slavery and honor the spirit of resistance that has sustained the Haitian people through centuries of hardship.

"The exhibition goes beyond the usual stereotypes to bring us into a wonderful and deep world of spiritual beliefs and ritual practices created and maintained by Haitians," explains Alaka Wali, The Field Museum's curator of North American anthropology. "We hear directly about what *Vodou* means from the practitioners, in their own voices."

*Top of page: These figures represent "fighting spirits" from a *Vodou* secret society (left). This *Vodou* ceremony honors a family of spirits called the *Gede*, who embody the cycle of life and death (right).*

IMAGES © CANADIAN MUSEUM OF HISTORY UNLESS OTHERWISE NOTED.

The exhibition features four sections: an overview of Vodou; an exploration of its historical development; an introduction to the rituals and powers associated with Vodou spirits; and finally an examination of how to place Vodou in the wider context of human spirituality.

From these thematic explorations emerge some key insights into the nature of Vodou. The recounting of Haiti's harsh past, for example, reveals the extent to which the country's long history of slavery, oppression, and resistance shaped Vodou symbols and practices. The experience of slavery is a central reality referenced in Vodou rituals and beliefs.

OF HAITI



Sequin-covered bottles contain drink offerings for different Vodou spirits known as lwa.

At the heart of *Vodou* are more than 300 objects—most from the renowned Marianne Lehmann Collection based in Pétionville, Haiti—including altars, vivid mixed-media sculptures, drums, sequin-covered flags, and charismatic, large-scale representations of spirits called *lwa* (pronounced *luh-WAH*). Almost all the objects are placed in the open, not behind glass, allowing visitors to make an unforgettable visual and emotional connection with them.



MAURO PERESSINI

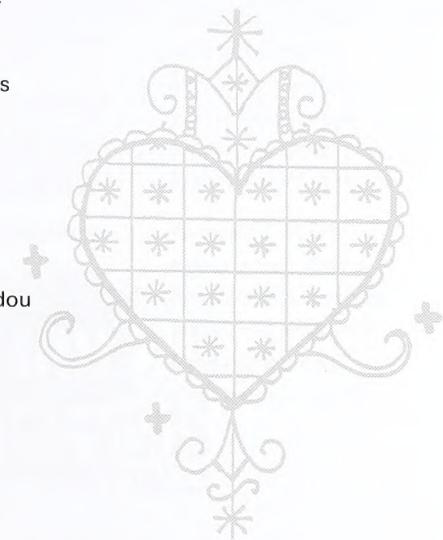
The exhibition tells the story of Vodou from the point of view of its practitioners. Vodouists explain their ceremonies and spiritual beliefs in their own words.



This vèvè, or symbolic drawing, represents Erzulie Freda—the spirit of love and worldly pleasure.

By introducing visitors to dozens of the *lwa* manifested in Vodou ceremonies—all of them with distinctive personalities reflecting everything from love and sensuality to the bravery of soldiers—the exhibition illuminates the multiple layers of meaning found in Vodou. On one level, the centrality of spirits in Vodou practice underscores the philosophical idea that life is interconnected, with no divisions between the material and the spiritual, the living and the dead. On another level, invoking spirits gives Vodouists a practical way to pay tribute to ancestors and keep memories of the past alive. **ITF**

Vodou: Sacred Powers of Haiti was co-organized by the Canadian Museum of History and the Foundation for the Preservation, Promotion and Production of Haitian Cultural Works in partnership with the Ethnography Museum of Geneva in Switzerland and the Tropenmuseum of the Netherlands.





A Family Legacy: THE TONRY COLLECTION

By Catie Boehmer, Individual Giving Specialist

WHEN THEY WERE CHILDREN IN THE 1950S, long-time Museum members Edward "Ed" Tonry, Jr., and his sister, Dolores Tonry Graves, accompanied their father on fossil hunts throughout the Chicago region. Edward Tonry, Sr., delivered gravel to construction sites, so he knew which local quarries provided fertile ground for fossil hunting. Within a few years, he amassed a large collection of specimens.

Edward Tonry, Sr., with daughter Dolores Tonry Graves presents Dr. Gene Richardson (left) with a fossilized footprint at The Field Museum, circa 1966 (above, left).

The Field Museum's Ian Glasspool examines specimens from the Tonry Collection with Dolores Tonry Graves and Ed Tonry, Jr. (above, right).

As the collection grew, Tonry's inner scientist became increasingly intrigued. Hoping to learn more, he first consulted books, then contacted Gene Richardson, PhD, at The Field Museum.

It was no surprise to daughter Dolores, now in her sixties, when her father reached out to Richardson, then the Museum's curator of fossil invertebrates. "We practically grew up at The Field Museum," remembers Dolores. Richardson encouraged Tonry to write a book about his collecting adventures, but instead, Tonry opted to donate his collection to the Museum.

"Mom liked that he had a hobby that was scientific, but she also made Dad keep everything in the basement," explains Dolores. "Rather than letting it collect dust, she encouraged him to donate it."

Tonry's finds proved valuable. In 1972, and again in 1976, a specimen from his collection was cited in *Fieldiana* (the Museum's scientific journal) as a prime example of *Ischadites koenigii*, an alga from the Paleozoic era.

Today, Tonry's fossils are still a part of the Museum's geology collections (complete with Tonry's original labels). Dolores and Ed were able to view their father's collection again at this year's Members' Nights.

"We got the royal tour!" Dolores exclaims.

"The scientists talked to us like we were old friends, and it's so nice to see those fossils living on," says Ed. "Knowing they're still being used by scientists 50 years later would've really thrilled Dad." **ITF**

WANT TO ENSURE THAT YOUR LEGACY LIVES ON AT THE FIELD, TOO?

The Edward E. Ayer Legacy Society honors those who remember The Field Museum through bequests and other planned and life income gifts. Membership is open to individuals who have made an estate provision for the Museum. If you have already made or are planning to make The Field one of your beneficiaries, please let us know so that we may thank you. Please call Bob Shafis, Director of Major and Planned Giving, at 312.665.7666 or visit fieldmuseum.org/planned-giving.

IMAGES: COURTESY DOLORES GRAVES (LEFT); GN91946_071D / JOHN WEINSTEIN (RIGHT)

WHAT DO YOU COLLECT?

By Eduarda Briseño, Public Programs Manager

THE FIELD MUSEUM HAS MORE THAN 25 MILLION SPECIMENS AND ARTIFACTS

IN ITS COLLECTIONS WITH NEW SPECIMENS ADDED DAILY. In the *Crown Family Playlab*, young children are introduced to the Museum's collections through inquiry-based science activities and hands-on exploration of these objects.

The Museum's education program *Collections: What Do You Collect?* is a unique opportunity for children ages 4–10 to showcase their own personal collections in a museum setting. Displayed within the Scientist's Lab of the *Crown Family PlayLab*, these temporary exhibitions encourage young children to consider why collections are important and what they reveal about the collector. Past exhibitions have featured a child's extraordinary collection of fossils, colorful sock puppets, and feathers and sticks collected on family walks.



COURTESY PETER TOLZMANN

If you would like your child's collection to be considered for display, please e-mail playlab@fieldmuseum.org to request an application. **ITF**

The Crown Family PlayLab is generously sponsored by the Crown family.

**"I started it when I was four.
It's so special to me. I love shark teeth.
Fossils are all I want for Christmas.
I want to be a paleontologist."**

MY FOSSIL COLLECTION

Simon Tolzmann | age 6

Featured collection from January to April of 2012

New Virtual Visits

Bring the Museum directly into the classroom with *Virtual Visits From The Field!*

Introduce your middle and high school students to behind-the-scenes research with three new modules launching this fall:

In **The Name Game: MicroPlants** scientist Laura Briscoe takes students on a virtual journey around the world to learn about the evolution of early land plants. Students can contribute to the Museum's on-going bryophyte research project: MicroPlants.

In **Backyard Biodiversity** students explore the biodiversity of their own schoolyard through ecological surveying with scientist Jim Louderman. Students can create their own carrion beetle trap to capture insects and learn to identify the specimens they collect.



In **Extreme Ecosystems: Hydrothermal Vents** students embark on an underwater adventure with Janet Voight, PhD, to learn about deep sea thermal vents and the evolutionary adaptations of organisms that survive in this extreme environment.

Visit fieldmuseum.org/virtualvisits for more information.

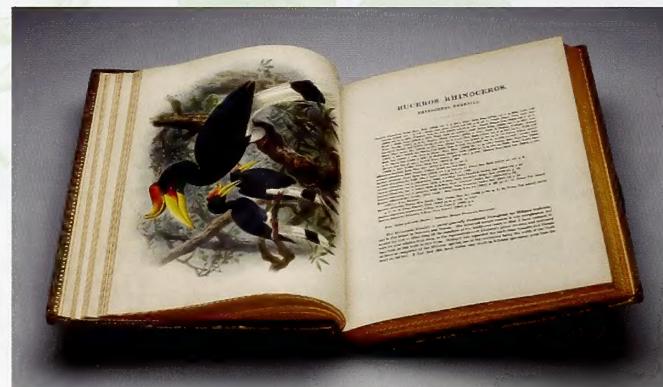
Major Sponsor: **TARGET**

Renovating the Museum's Rare Book Room

By Christine Giannoni, Head of Library Collections



The Museum's Mary W. Runnells Rare Book Room contains a collection of significant scientific works from the 19th century, many of which are beautifully illustrated.



OPEN TO ALL!

Many holdings of the Library's Collections can be searched on our new online catalog available at fieldmuseumlibrary.worldcat.org. The Marie Louise Rosenthal Library is open via appointment Tuesday–Friday, 1–4pm. Please visit the Library's website for more information: fieldmuseum.org/library.

THERE ARE MANY REMARKABLE ITEMS IN THE FIELD MUSEUM'S COLLECTIONS,

and those cared for within the Marie Louise Rosenthal Library are no exception. The Library's collections, formed in 1894 with the Museum's inception, have grown through the generous support of Museum benefactors and researchers, as well as through strategic purchases utilizing endowed funds for acquisitions.

Highlights of the collection include: eighteen original letters written by Charles Darwin; photographs that provide a visual record of The Field Museum, its scientific expeditions, educational programs, and exhibitions; handsomely illustrated books that document early descriptions of plant and animal species; research journals on subjects related to biological and cultural diversity upon which our staff relies heavily to study the natural world and its people.

Caring for these irreplaceable collections demands proper environmental conditions that keep materials safe from pests, fire, and excessive humidity and temperature.

Significant renovations to improve these environmental conditions began last summer to the Rosenthal Library, as well as the Mary W. Runnells

Rare Book Room, and continued into the fall. The spaces have benefitted greatly from new lighting, upgraded HVAC systems resulting in improved air quality and temperature control, as well as new synthetic carpeting replacing the old wool carpeting (which is important for pest control at the Museum!).

Funding from the Negaunee Foundation allowed the Museum to complete this work while providing the utmost care to the Library collections.

The conservation and accessibility of Library collections to current and future researchers is an essential part of the Library's responsibilities. The Museum's community of members provides vital support to this historic academic resource. [ITF](#)

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High Flyers: Chicago Peregrine Program

By Mary Hennen, Collections Assistant / Director, Chicago Peregrine Program

DIVING AT SPEEDS OF OVER 200 MILES PER HOUR,

Peregrine Falcons (*Falco peregrinus*) are famous as the fastest animals in the world. Just as remarkable is their recent recovery from a nearly catastrophic population decline.

Historically, an estimated 400 to 500 pairs nested east of the Rocky Mountains, but by the 1960s Peregrines were extirpated from the region and declined worldwide. This decline was the result of thin egg shells caused by an accumulation of the insecticide DDT after the birds ingested contaminated prey. The weight of the incubating adults crushed the eggs before they could hatch.

For more than 30 years, the Chicago Peregrine Program has monitored Illinois' Peregrine population and served as a mediator between falcons and humans. During the late 1980s, the program actively released young Peregrines into the wild, and over time, Illinois' numbers of breeding pairs grew from zero nesting pairs (1951–1986) to a single pair in 1987 to over 20 in 2013. Because of these increased numbers, the Peregrines' status in Illinois has received preliminary approval for delisting from the state's Threatened and Endangered Species list.

The Field Museum is home base for the Chicago Peregrine Program. A vast number of dedicated volunteers work to track nest sites, identify adults, retrieve injured young, monitor winter sightings, and educate the public about Peregrines.

If you'd like to become a volunteer—or simply learn more about the Peregrines' story—please visit the Chicago Peregrine Program's website at fieldmuseum.org/illinois-peregrines. Webcam links at the top of the web page enable viewers to see nest sites around the city—be sure to check back in Spring when Peregrines are nesting! [ITF](#)

An adult female named Rahn with her brood of four chicks at a Wacker Drive nesting site.

LIKE US!

Like the Chicago Peregrine Program on Facebook:

www.facebook.com/IllinoisPeregrines.



COURTESY OF STEPHANIE WARE

Scientist Spotlight: Mary Hennen

By Franck Mercurio, Editor

Mary Hennen began her career with The Field Museum as a student volunteer in 1989, the same year she joined the Chicago Peregrine Program. Today, Mary is director of the Program and a collections assistant in the Museum's bird division. Well prepared for her work with Peregrines, Mary studied wildlife management as an undergraduate at the University of Wisconsin–Stevens Point and earned a master's degree in environmental biology from Governors State University.

Chicago Magazine recently recognized Mary's 25 years of service to the Peregrines' cause with a 2014 Green Award, the magazine's annual "eco-honors" for outstanding accomplishments in the stewardship of the natural environment.

As part of the Program's outreach efforts, Mary gives public talks and presentations. You can meet Mary—and a live Peregrine

Falcon—as part of "Scientists in the Field" in Stanley Field Hall on October 17 and November 7 from 10am to 12 noon.



COURTESY SEAN WARE



THE JAVA SEA SHIPWRECK: PORTAL TO THE PAST

By Lisa C. Niziolek, PhD, Cyrus Tang Hall of China Postdoctoral Researcher

IN 1998, DOZENS OF PACKING BOXES ARRIVED AT THE FIELD MUSEUM'S SHIPPING DOCK CARRYING THOUSANDS OF CERAMIC PIECES AND OTHER ARTIFACTS THAT HAD LAIN AT THE BOTTOM OF THE JAVA SEA FOR ALMOST 700 YEARS.



Careful historical, ethnographic, and archaeological research aided scholars in creating this scale model of the sunken ship (above).

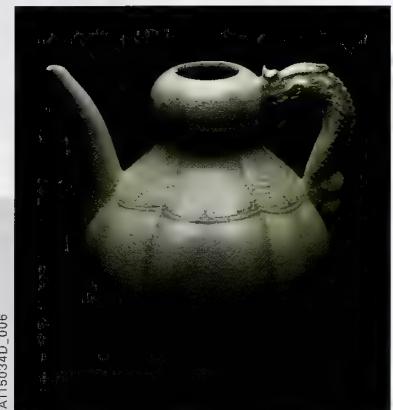
Top of page (clockwise, from lower left): This Cizhou-style bowl displays a finely incised peony, a flower associated with wealth and honor in China. This small metal figure may have supported a small altar or platform. The inscription on this box base indicates that it was made in Fujian Province, China.

Most of the Museum's archaeological collections are from terrestrial sites, but these objects were excavated underwater, some 27 meters below the ocean's surface. Along with spices and silks, they comprise the cargo of an Indonesian trading vessel that plied the seas of East and Southeast Asia on the eve of the Mongol invasions of China. The salvaged artifacts provide an invaluable record of early mass production and maritime commerce in an already globalized world.

The Java Sea Shipwreck site was first discovered by fishermen in the late 1980s; however, excavations did not take place until 1996. Before then, local fishermen, divers, and at least two salvage companies looted the site, leading to the loss of archaeological materials and other contextual information. Fortunately, the company that eventually excavated the wreck, Pacific Sea Resources, kept as much of the assemblage together as possible. Half of the material was given to the Indonesian government (per a licensing agreement) and the other half to The Field Museum in 1998.

Since then, Field Museum archaeologists and collections staff have worked with a crew of volunteers and interns to document, care for, and research the collection's more than 7,500 objects. Volunteers Jean Vondriska and Lani Chan spent hundreds of hours cataloging and labeling artifacts. Museum Associate Peter Gayford researched

This finely-made qingbai ewer, or water jug, features a molded dragon handle.



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the ship's structure and origin. Amanda Respass and Maura Condon, the Museum's two 2012 Boone Scholar Interns for East Asian Studies, also made significant contributions by translating Chinese inscriptions on ceramics from the wreck.

Researchers estimate that the boat, thought to have been 28 meters long, was carrying roughly 200 tons of iron and 100,000 ceramic pieces mostly from China—more than 230 tons of cargo total! Overloading, coupled with turbulent seas, might have contributed to the ship's sinking. (There were no underwater hazards nearby, and the closest land is about 40 nautical miles away.) Pirates could have also threatened the ship; in the 13th century, these waters teemed with marauders waiting to plunder commercial vessels.

The iron, cheaply mass-produced in China, was probably being shipped to iron-poor Java to make tools and weapons. Most of the ceramics on board were mass-produced and include low-quality rice bowls with a pale greenish-gray glaze (think 13th-century IKEA), olive green bowls with floral designs, black-glazed tea bowls, and beautifully crafted covered



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ANTHROPOLOGY COLLECTIONS

The ship's cargo included hundreds of bowls mass-produced in China (above). A bright green glaze originally covered this box lid, decorated with an auspicious dragon (left).

boxes and ewers with a light blue glaze (called *qingbai* ware). There were also bowls, vases, and other ceramics with distinctive floral decorations of black pigment originally covered in a bright green glaze, which has long since weathered away.

Most of the pieces were likely fabricated at kilns in Fujian Province on China's southeastern coast. Two box bases (one pictured opposite page, top right) bear inscriptions naming their production location: Jianning Fu. Other pieces, such as the dragon-handled ewer (pictured top left), appear to have been produced farther inland at Jingdezhen, Jiangxi Province, home to China's imperial kilns. (Since 2011, with support from the Boone family, these ceramics have been sourced using compositional analyses in the Museum's Elemental Analysis Facility.)

Although the crew and most of the wooden ship are long lost, the surviving cargo testifies to the complex networks that linked communities throughout East and Southeast Asia and the Indian Ocean region centuries ago. More than 40 pieces from the Java Sea Shipwreck, along with a model of the ship itself, will be on display in the Museum's new permanent exhibition on China, *Cyrus Tang Hall of China*, scheduled to open in June 2015. **ITF**

ARTIFACT PHOTOS BY JOHN WEINSTEIN

21ST CENTURY MUSEUM

Printing a 3D Cheetah

By JP Brown, Regenstein Conservator for Pacific Anthropology



WHAT WOULD YOU SAY IF SOMEONE ASKED YOU TO "PRINT" A CHEETAH

USING 3D TECHNOLOGY? If you were a conservator or conservation intern in the Museum's Regenstein Laboratory, you'd say "Sounds interesting—tell me more."

The staff of the Regenstein Lab routinely uses 3D imaging and 3D printing to tackle some of the Museum's toughest research and exhibition challenges. From mummies to meteorites, they and collections specialists, like Rebekah Banasiak and Anna Goldman, are always up for the task.

The exhibition *The Machine Inside: Biomechanics* presented a particular challenge. The Museum's Exhibitions Department needed a cutaway cheetah: one side showing the cat's exterior and the other displaying its skeleton, superbly adapted for running.



JP Brown takes digital photos of a taxidermied cheetah aided by Dan Breems.



To create a 3D model of a running cheetah, the team started with a taxidermied specimen from the Zoology collections. They took digital images from hundreds of different angles; a specialized software program then matched points on the photos—for 12 hours—to make an accurate, full color, 3D computer model.

The team then cut the computer model in half: so far, so good.

The second task was to create the cheetah's skeleton. The team could have cast the skeleton using real bones, but this risked damaging study specimens. Instead, an intact cheetah body—preserved in a tank of alcohol in Zoology collections—was transported to the University of Chicago Hospitals where Professor Charles Pelizzari performed a full-body CT scan.

The CT scan produced a stack of X-ray pictures of the cheetah's interior without harming the specimen. In a month-long process, the team then digitally modeled groups of cheetah bones from the CT scans using a specialized software program.

The bone models were then 3D printed and shipped to Blue Rhino Studio in Minnesota. Using the Museum's 3D computer model of the cheetah as a guide, the artists at Blue Rhino then sculpted and painted the exterior half of the cheetah and attached the modeled bones to the cutaway side.

The completed cheetah model is currently traveling with the international touring version of *The Machine Inside: Biomechanics*. See The Field Museum exhibition before it closes January 4, 2015. [ITF](#)

The Machine Inside: Biomechanics was developed by The Field Museum, Chicago, in partnership with the Denver Museum of Nature & Science.

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MUSEUM TECHNOLOGY

Scanning a Paleolithic Skull

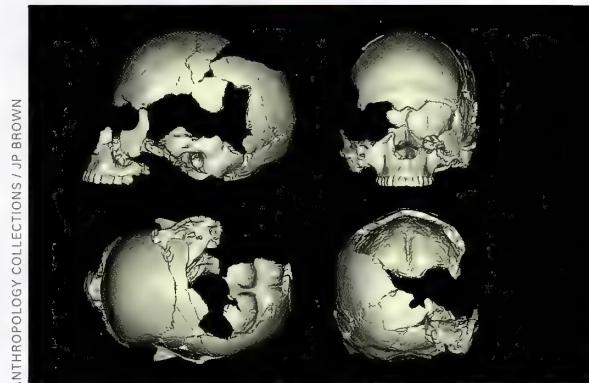
By Emily Graslie, Chief Curiosity Correspondent

THE SOPHISTICATION OF MODERN TECHNOLOGY CONTINUES TO INSPIRE NEW DISCOVERIES BY ENCOURAGING CREATIVE PARTNERSHIPS IN SCIENCE.

Tools that were developed for particular uses in other fields are increasingly being applied to museum research in innovative ways.

I experienced this first-hand in April when The Brain Scoop team was offered an opportunity to accompany Field Museum conservator and technologist JP Brown to Alloyweld Inspection Company in Chicago's northwest suburbs. Accompanying us was an artifact of extreme historical and scientific value: the skull of the Magdalenian Woman excavated from Cape Blanc, France, in the early 20th century.

The reason for bringing human remains—potentially 17,000 years old—to a company whose primary focus is non-destructive testing of heavy machinery parts becomes obvious when you consider the industry's scanning technologies. Specialists at Alloyweld can perform micro-CT scans allowing inspectors to see inside industrial parts. A scan of Magdalenian Woman's skull provided an interior picture of her cranium in unprecedented detail.



Partnering with Alloyweld Inspection Company, Field Museum researchers created CT scans of Magdalenian Woman's skull in unprecedented detail.

Essentially, these anthropologists rebuilt the skull, and their results gave us a very different image of Magdalenian Woman's appearance.

Micro-CT images can help confirm that the skull's most recent modifications are scientifically and anatomically accurate. Using 3D printing technologies, Magdalenian Woman's face can now be recreated in three dimensions without disturbing the original cranium, which is too fragile to be broken apart and rebuilt.

A research alliance between the Museum and Alloyweld would have been unimaginable a few decades ago, but today we use this type of partnership to build a more cohesive understanding of our world and how museum collections teach us about our past. **ITF**



The remains of Magdalenian Woman as they appear in Evolving Planet.

When Magdalenian Woman was initially excavated, a pickaxe fell through her skull, breaking it into pieces. Anthropologists reconstructed the cranium in the 1930s; but forensics was a young science, and facial reconstruction was limited by early technology. Decades later, Field Museum scientists performed another reconstruction using CT-scanning, computer software, and other digital technologies.

the BRAIN SCOOP

with
EMILY GRASLIE

Emily Graslie, YouTube personality and the Museum's first-ever Chief Curiosity Correspondent, hosts the popular web series *The Brain Scoop*. To learn more about Emily's field trip to the Alloyweld Inspection Company, be sure to check out her upcoming episode at youtube.com/thebrainscoop.



SCIENCE ANIMATED: 3D FILMS AT THE FIELD

THE HOLIDAYS ARE AROUND THE CORNER, AND THE FIELD MUSEUM IS A GREAT PLACE to entertain out-of-town guests and kids out of school. The Museum's state-of-the-art 3D Theater sponsored by Ernst & Young offers four movies that provide fun and engaging ways to learn about the natural sciences.

WAKING THE T. REX 3D: THE STORY OF SUE

Visited by millions, the world famous *T. rex* named SUE was the world's greatest predator 67-million-years ago, but much of her life has been a mystery to us...until now. See what scientists have discovered about this colossal dinosaur's life story. Follow SUE as she grows from hatchling to adult and dare to come face-to-face with this roaring, earthshaking *T. rex*.

D3D Cinema and The Field Museum present *Waking the T. rex 3D: The Story of SUE*.

EGYPT 3D

Follow researchers and explorers as they piece together the archeological and genetic clues of Egyptian mummies. Learn how scientists are studying mummies and reconstructing their DNA, not only to increase our understanding of ancient Egyptian culture and daily life, but also to gain insight into modern human genetics and help advance medical treatments.

Giant Screen Films and Gravity Pictures, in association with The Franklin Institute and the Museum of Science, Boston, present *Egypt 3D*.



TITANS OF THE ICE AGE 3D

Discover an icy world on the brink of extinction, where humans share the frozen tundra with majestic beasts. Encounter saber-toothed cats, dire wolves, giant sloths, and wooly mammoths that lived 10,000 years before modern civilization. Meet our ancestors who developed art, language, and hunting skills as they sought to understand and survive in their harsh world.

D3D Cinema and The Field Museum present *Titans of the Ice Age 3D*.

TINY GIANTS 3D

The Field Museum's latest offering, *Tiny Giants 3D*, reveals the courage and natural adaptations that our planet's smallest creatures need to succeed in their titanic battle for survival. Groundbreaking cinematography and cutting edge 3D technology achieve an incredible immersive experience allowing audiences to see and feel what life is like if you were chipmunk-sized! **ITF**

BBC Earth Productions and Giant Screen Films present *Tiny Giants 3D*.



3D Theater sponsored by Ernst & Young LLP

The Field's Holiday Gift Guide

By Amy Harmon, Buyer and Product Developer, Field Museum Stores



**EXPLORE AN AMAZING ARRAY OF GIFTS FOR
EVERYONE ON YOUR LIST AT THE FIELD MUSEUM STORES!
WHETHER YOU SHOP ONLINE OR IN PERSON,
A WORLD OF DISCOVERY AWAITS.**



DISCOVER THE PRESENT

From the marvels of natural engineering to the religious and cultural traditions of Haiti, our special exhibition stores help bring your Museum memories home. Visit the Biomechanics Store and new Vodou Store (opening in October) for unique gifts that continue the conversation about our planet's diverse organisms and human cultures.



DRESS FOR ADVENTURE

Field Museum forever! This subtle, stylish range of black-on-black gear features a unique banner design exclusive to the Field Museum Stores. Whether on the trail or on the train, it's the perfect present for your favorite Field fan—even if that fan is you!



Join us for Members' Holiday Shopping Days!

From Monday December 1 through Sunday December 7 members receive a double discount (20 percent) on all purchases, whether in-house or online at fieldmuseum.org.



EXPLORE THE PAST

They're perennial prehistoric favorites, extinct but not forgotten! Share your love of all things dinosaur with selections from our gargantuan collection. Toys, gifts, puzzles, games, books and more: we're your DinoStore! [ITF](#)

PHOTOS: JOSH RINK / MUSEUM STORES



V is for Vodou... and Vikings

For members only!

Vodou: Sacred Powers of Haiti

Members' Only Viewing and Lecture

An exclusive event for Museum members, will be held on Thursday, October 30 at 5pm. As a valued member, you are invited to delve deeper into the secret history and living spirits of Haitian Vodou with a lecture by Janet Hong, exhibition project manager.

5pm Exhibition viewing begins.

Cash bar is available in Stanley Field Hall.

6:30pm Lecture begins in James Simpson Theater.



© CANADIAN MUSEUM OF HISTORY MARIE-LAURENCE DIFRATA

View *Vodou: Sacred Powers of Haiti* and *The Machine Inside: Biomechanics* before or after the lecture. Tickets are complimentary and not deducted from your member ticket allotment. Reservations are required and space is limited. Please call 312.665.7705 or visit fieldmuseum.org/support/reserve-membership-tickets.



© 2013 BY THE SWEDISH HISTORY MUSEUM

The Vikings are coming!

Exhibition Opening February 27, 2015

From The Swedish History Museum comes *Vikings*, the dramatic and surprising story of these infamous mariners and warriors. Recent archaeological discoveries of Viking culture—which flourished more than a thousand years ago—have cast out common stereotypes. The exhibition presents hundreds of artifacts that go beyond the legends of the seafaring people and reveal fascinating insights into everyday Viking life, their belief systems, and influence on European cultural history.

Stay tuned for information about members-only previews happening this winter.

Vikings is a joint venture between and produced by The Swedish History Museum in Sweden and MuseumsPartner in Austria.

Major Sponsors: **DISCOVER**  **VIKING CRUISES** 

GO BEHIND THE SCENES

Don't want to wait until Members' Nights to experience behind the scenes at the Museum? No problem. The Field now offers Behind-The-Scenes Tours on a daily basis. Led by our Field Guides, each tour incorporates new research projects and discoveries as they happen, so every experience is unique.

Space is limited to 10 visitors per tour, so get your tickets now! For more information, or to purchase tickets, call 312.665.7705 or visit fieldmuseum.org/happening/behind-scenes-tours-field-museum.



Give the Gift of Membership Today!

As a current member, you know the great benefits of Museum membership. Share the gift of discovery this holiday season by purchasing a membership to The Field Museum for a friend or loved one.

Your gift membership includes:

- Free admission and free tickets to temporary exhibitions
- Tickets to our famed Members' Nights
- One-year subscription to *In the Field* member magazine
- Discounts at the Museum stores and restaurants and on education programs
- And more!

The holidays only come once a year, but a Field Museum membership brings excitement and exploration all year long!

Order a gift membership today by:

- visiting fieldmuseum.org/support/gift-membership,
- calling 312.665.7700, or
- stopping by the Membership Service Desk on your next visit to The Field Museum.

ID DAY AT THE FIELD

Have you been hiking and found a plant you couldn't identify? Have you snapped a photo of an animal on vacation, and now can't figure out what it is? Find something you think is a fossil, but aren't quite sure? Attend the Museum's first ID Day on September 27 to have Field Museum scientists help identify your discoveries and take a look at some specimens from the Museum's collections. Visit our website for more details about what we can identify and details on how to bring specimens inside the Museum.

9/27



The Field Museum salutes the people of Chicago for their long-standing support of the Museum through the Chicago Park District.



ILLINOIS
ARTS
COUNCIL
AGENCY

This program is partially supported by a grant from the Illinois Arts Council Agency.

GN1954_192D / KAREN BEAN



museum campusneighbors

ADLER PLANETARIUM

In the Adler's newest space adventure, **Destination Solar System**, audiences tour the most spectacular sights in our celestial neighborhood through the leading-edge technology of the Grainger Sky Theater. Kids take off on a modern-day space adventure in the **Planet Explorers** exhibition, where they climb, crawl and fly through space. Every Monday from 9:30am to 1pm families can take part in special programming for children 2 to 6-years-old called "Young Explorers Mondays." Visit www.adlerplanetarium.org.

SHEDD AQUARIUM

Don't miss your last chance to see **Jellies**, Shedd Aquarium's special exhibition. This ever-changing array of delicate, elaborate animals closes at the end of the year. You still have time to enjoy the Stingray Touch experience, too, open every day in September and weekends in October as weather permits. Feel the wonder as a school of gentle cownose rays swoops through the water and brushes against your outstretched hand! See the Great Lakes' largest fish every day at Shedd's sturgeon touch pool. Visit www.sheddaquarium.org.

program calendar

september

Art and Science Spotlight*

9.20, 11am–2pm > Young naturalists and their families are invited to learn about the conservation of Monarch butterflies and other locally endangered species. Field Museum scientists will be on hand to display butterfly and bird specimens from our collections. Learn why migration patterns are so important to the success of ecosystems and their impact on extinction. Later, join us in the Art Studio for butterfly creations and stay for a Monarch butterfly release outside our Museum doors!



MORGUEFILE.COM

october

Art and Science Spotlight*

10.18, 11am–2pm > Visit the Art Studio and use fabric, socks, and collage materials to create your very own stuffed creature. Be inspired by animals on display throughout The Field Museum and be sure to join us during story time to hear exotic animal tales.

november

Art and Science Spotlight*

11.15, 11am–2pm > Join us for storytelling sessions with the National Association of Black Storytellers. Hear lively stories in the East Entrance hallway and then visit the Art Studio to create a masterpiece.

december

Art and Science Spotlight*

12.20, 11am–2pm > Join us for spectacular Haitian folkloric dance performances and then visit the PlayLab to take part in Caribbean-themed activities.

*FREE with Museum Admission
in the Crown Family PlayLab

Program Tickets + Info 312.665.7400

General Museum Info 312.922.9410

DOZIN' THE DINOS overnights at the museum

Bring your sleeping bag and explore one of the most exciting spots in town! Dozin' with the Dinos is a chance for children ages 6–12 to spend the night at The Field Museum. Enjoy activities like games from around the world or see and touch live insects from your own backyard. Enjoy a snack break to fuel yourself for a self-guided tour of *Inside Ancient Egypt*—in the dark! (Make sure to bring your flashlight!) Before you know it, you're listening to bedtime stories outside the Maori Meeting House and crawling into your sleeping bag in one of our wondrous exhibitions.

Fridays, 5:45pm to 9am the following morning.

Standard Overnight: \$63; \$55 members and groups

Premium Packages: Families can also sign up for Premium Package 1 and sleep in our *Evolving Planet* exhibition, or book the Premium Package 2 with Tour and sleep in *Evolving Planet* and add a behind-the-scenes tour with a Field Museum scientist!

Premium Package 1: \$76, \$66 members

Premium Package 2 (with tour): \$88, \$78 members

2015 DATES

January 16* & 23 • February 6 & 13 • March 6, 20 & 27 •

April 10 & 18 • May 8

***1.16** > Join us for a special Dozin' with the Dinos event with a night of puppet performances, self-guided tours, and fun activities.

Tickets for the 2015 season are on sale now.

Visit fieldmuseum.org/overnights.org or call 312.665.7400 to register.

BREAKFAST WITH SANTA— AND SUE!

Just in time for the holidays: enjoy a buffet breakfast with Santa and SUE in Stanley Field Hall—and have your photo taken with Santa—Saturdays in December before Christmas. Three seatings are available the mornings of December 6, 13, and 20.

Tickets go on sale this fall. Non-member prices are \$40 (adult) and \$28 (child). Member discounted prices are \$30 (adult) and \$22 (child). For more information, contact Special Events at 312.665.7600.



badge day

BOY SCOUTS + GIRL SCOUTS!



DSC05185, SCIENCE & EDUCATION

meet a scientist

Every Friday in October, November, and December > 10am–12pm

10.16 > 10am–12pm (National Fossil Day)

12.26–30 > 10am–12pm (Holiday schedule)

Stanley Field Hall / East Entrance
(locations vary)

Come to The Field Museum and get to know some of our scientists! Most Fridays from 10am to noon, scientists will be out in the Museum sharing the wonders of our collections and highlights of their research. Hear about their work, see real artifacts and specimens from the over 25 million objects *not* on display at The Field, and experience the Museum like never before. Topics will range from birds to insects, from mammals to plants, from pottery to spear points, and more.

Earn a Merit Badge at The Field

Badge Day at The Field will have scouts trekking across the Museum with fun scavenger hunts, exploring natural sciences through hands-on activities, and experiencing a behind-the-scenes tour with a Field Museum scientist. All Merit Badge requirements are completed through the program.

Fall 2014 Boy Scout Merit Badges

Each Boy Scout program runs on Saturdays in the fall from 9am–3:30pm. Merit badge programs in archaeology, insect study, and geology are sold out. As of press time, the following programs are currently open:

10.18 + 11.15 > Mammal Study

Be sure to check out the Field Museum website in summer 2015 for details about next fall's offerings.

Fall 2014 Girl Scout Merit Badge NEW!

The Girl Scout program runs on Saturday, September 20, from 9:15am–2:45pm.

9.20 > Junior Flower Badge

Cost: \$25 per scout; \$12 per chaperone
(At least one chaperone per troop is required.)

Limited tickets are available.

Register at fieldmuseum.org/happening/badge-day-field.



for teens!

Explore your world through science with after school programming at The Field Museum. Come tinker, create, and innovate in our Digital Studio. Programs run from 4pm–6pm, are free of charge, and open to teens 14–18 years old. For more information, visit fieldmuseum.org/schools/teens-2014.

Thursdays > 9.18 through 10.23

Gardening with Arduino

Wednesdays > 10.22 through 11.19

Exploring Cultures through Movie Making

open mic puppetry

Calling all puppeteers! Be a part of the Chicago International Puppet Theater Festival.

The Field Museum invites area puppeteers—young and old, professional and amateur, solo and ensemble—to perform on one of three stages at The Field Museum. Applications for family-focused puppet performances will be accepted starting Monday, September 8. Performers will be confirmed by Friday, October 31. Selected performances will be shown along with *Rich in Tradition—Chinese Shadow Puppets* on January 17, 2015. For more information, visit fieldmuseum.org.



looking ahead

Rich in Tradition—Chinese Shadow Puppets

1.17, 3pm > Street theaters and festivals in China featuring shadow puppets can be traced back for hundreds of years. The stories within these traditional performances have become legendary. Don't miss a unique opportunity to see this beautiful art form come to life in a shadow puppetry performance by renowned New York-based Chinese Theater Works.

Featured works will take inspiration from The Field Museum's own shadow puppet collection and will include famous stories like *Monkey King* and *Journey to the West*, which are still performed today.

Performance is free for Museum members and non-members with Basic Admission.

The Field Museum

1400 South Lake Shore Drive
Chicago, IL 60605-2496

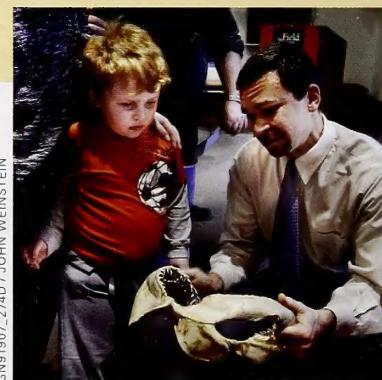
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DOUBLE your impact!



The Field Museum has grown and thrived for more than a century—thanks to essential support from individuals like you. Make a gift to your Museum before December 31, and your investment will work twice as hard! All new and increased gifts will be matched by an anonymous donor.

Thank you for helping educate the public, protect the planet, and care for our priceless collections!



SAVE THE DATE

Make your gift to the Annual Fund before November 1 and save the date for Donor Night! Join us Tuesday, November 11, to see *Vodou: Sacred Powers of Haiti* and meet Field Museum scientists and educators to discuss this new exhibition and the collections with which they work; enjoy complimentary dinner and drinks in Stanley Field Hall and more!

For more information, visit fieldmuseum.org/support/individual-giving,
call 312.665.7777, or email annualfund@fieldmuseum.org.

11.11

